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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/752,721	01/08/2004	Eric A. Merz	117415	5536

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EXAMINER	
MARTIN, LAURA E	
ART UNIT	**PAPER NUMBER**
2853	

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

EV

Office Action Summary	Application No.	Applicant(s)	
	10/752,721	MERZ ET AL.	
	Examiner	Art Unit	
	Laura E. Martin	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

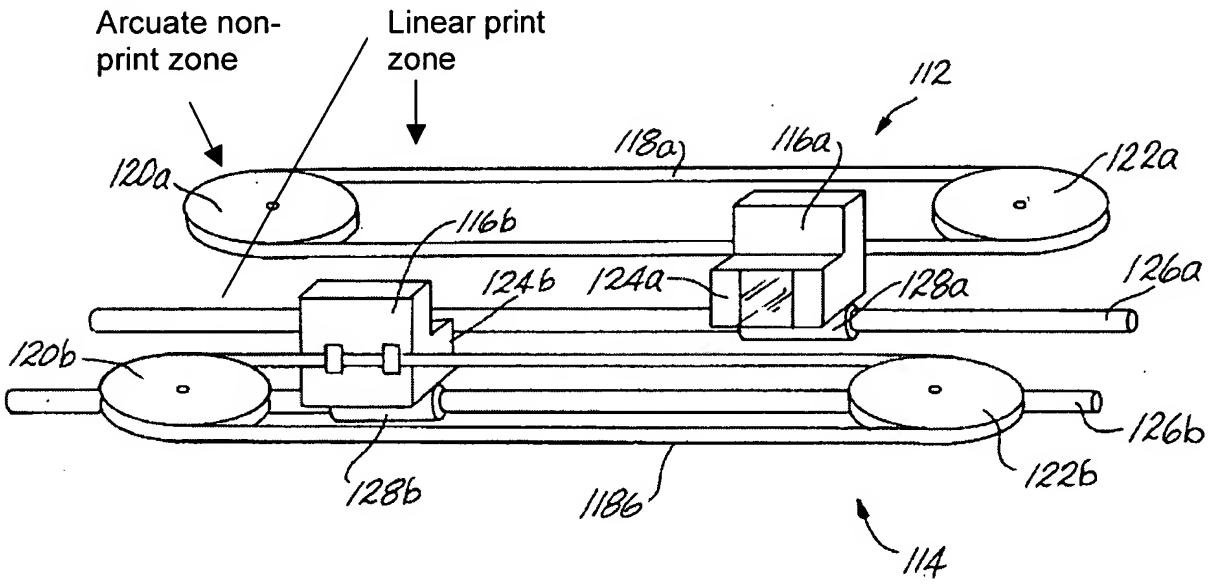
> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 7-16, 18-20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kupcho et al. (US 5670995) in view of Burikov et al. (US 6341839).

As per claims 1, 10, 11, and 22, Kupcho et al teaches a drive assembly for a printhead, comprising: at least two spaced rollers (figure 3, elements 120a and 122a), at least one of which is a driven roller (figure 3, element 120a), an endless drive belt loop connected between said at least two spaced rollers for rotation thereabout to define an endless loop drive path (figure 3, element 118a); a drive mechanism that drives the endless drive belt loop in at least a first direction (column 6, lines 54-55); a guide assembly that constrains movement of the printhead assembly (figure 3, element 126a). Kupcho et al also teaches an indexing mechanism to advance a recording medium past the printhead in a direction transverse to the first direction (column 2, lines 30-50).

As per claims 5 and 15, Kupcho et al does not teach the endless loop drive path consisting of two linear print zones and two arcuate non-print zones defined by one-half the circumference of the spaced rollers (figure 3 shown below), the printhead having a print swath of a width S (Figure 2, 12) measured transverse to the first direction, and the

two linear print zones being separated by spacing S_N, where N is an integer multiple of S (Figure 3, distance between 126 a and 126 b).



As per claims 7 and 16, Kupcho et al teaches the at least one printhead contains at least two printheads diametrically opposed to one another on an endless drive loop path.

As per claims 8 and 19, Kupcho et al teaches the guide assembly (figure 3, element 126a) constraining movement of the printhead assembly (figure 3, element 116a) in at least the linear print zone.

As per claims 9 and 20, Kupcho et al teaches a controller controlling the drive mechanism to operate in a second direction opposite a first direction (column 5, lines 60-64).

As per claim 18, Kupcho et al teaches an indexing mechanism advancing the recording medium in a path in a direction transverse to the first direction (column 2, lines 30-50) and the two printheads face toward the recording medium so as to be capable of simultaneous both side printing (figure 3, elements 116a and 116b).

As per claim 1, 11, and 22, Kupcho et al does not teach a guide assembly being configured to allow movement of the printhead around both linear and arcuate portions of the endless loop drive path and a controller that controls the drive assembly to traverse the printhead assembly over at least one-half the length of the endless drive belt lop to advance the printhead across a linear print zone and an arcuate non-print zone with a predetermined drive profile.

As per claims 2 and 12, Kupcho et al does not teach a controller controlling the drive assembly to rotate the printhead assembly in a unidirectional endless loop mode in which at least one full revolution of the endless loop drive path is traversed by the printhead assembly.

As per claims 3 and 13, Kupcho et al does not teach a controller controlling the drive assembly to advance the printhead assembly across the linear print zone at a substantially constant velocity.

As per claims 4 and 14, Kupcho et al does not teach a controller controlling the drive assembly to advance the printhead assembly across the arcuate non-print zone at the same substantially constant velocity.

As per claims 18 and 22, Kupcho et al does not teach the indexing mechanism feeding paper through a center of an endless loop drive path

As per claim 1, 11, and 22, Burikov et al teaches a guide assembly being configured to allow movement of the printhead around both linear and arcuate portions (column 3, lines 8-10) of the endless loop drive path (figure 2,element 9) and a controller that controls the drive assembly to traverse the printhead assembly over at least one-half the length of the endless drive belt lop to advance the printhead across a linear print zone and an arcuate non-print zone with a predetermined drive profile (column 4, lines 53-62).

As per claims 2 and 12, Burikov et al teaches a controller controlling the drive assembly to rotate the printhead assembly in a unidirectional endless loop mode in which at least one full revolution of the endless loop drive path is traversed by the printhead assembly (column 3, lines 8-10).

As per claims 3 and 13, Burikov et al teaches a controller controlling the drive assembly to advance the printhead assembly across the linear print zone at a substantially constant velocity (column 3, line 31).

As per claims 4 and 14, Burikov et al teaches teach a controller controlling the drive assembly to advance the printhead assembly across the arcuate non-print zone at the same substantially constant velocity (column 3, line 31).

As per claims 18 and 22, Burikov et al teaches the indexing mechanism feeding paper through a center of an endless loop drive path (figure 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the drive assembly of Kupcho et al with the disclosure of Burikiov et al to create a mode of printing that is more efficient in speed and energy.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kupcho et al. (US 5670995) and Burikov et al. (US 6341839), in further view of Goodwin et al. (US 4980009).

Burikov et al. and Kupcho et al. teach the drive assembly according to claim 5; however, neither reference teaches the spaced rollers having a radius of R of between about 15 and 50 mm to define a turnaround zone of length πR.

Goodwin et al. teaches the spaced rollers having a radius of R of between about 15 and 50 mm to define a turnaround zone of length πR (column 4, lines 25-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the drive assembly of Burikov et al. as modified by the disclosure of Goodwin et al. in order to provide a high quality printing apparatus.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kupcho et al. (US 5670995) and Burikov et al. (US 6341839), in further view of Menendez et al. (US 2003/0227511).

Burikov et al. and Kupcho et al. teach the printer according to claim 16; however, neither teach the at least two printheads operate simultaneously to provide two offset print swaths separated by a predefined spacing.

Menendez et al. teaches the at least two printheads operate simultaneously to provide two offset print swaths separated by a predefined spacing [0011].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the drive assembly of Burikov et al. as modified by the disclosure of Menendez et al. in order to provide a higher quality print control.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kupcho et al. (US 5670995) and Burikov et al. (US 6341839), in further view of McCue, Jr. et al. (US 6325503).

Burikov et al. and Kupcho et al. teach the printer according to claim 11, however, neither teaches it further comprising a duplexer that reverses an orientation of the recording medium so that both sides of the recording medium can be printed.

McCue, Jr. et al. teaches the printer further comprising a duplexer that reverses an orientation of the recording medium so that both sides of the recording medium can be printed (column 4, lines 46-51).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printer of Burikov et al. as modified with the disclosure of McCue, Jr. et al. in order to provide a high quality printing apparatus.

Response to Arguments

Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Martin whose telephone number is (571) 272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Laura E. Martin

5/12/06

MANISH S. SHAH
PRIMARY EXAMINER